UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

SUBJECT: Toxicological Review of HW06 Data (R2) 2 July 2012
Dimock, PA

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On 23 May 2012, U.S. EPA collected a second round of samples from HW06 in Dimock. These samples were collected only from the wellhead, not the tap, because an alternate water supply is provided at this location. The samples were analyzed for 27 inorganic constituents; analytical results were validated and compared to risk-based screening levels and/or standards for public drinking water supplies. Findings in excess of these comparison concentrations are presented below.

Arsenic

Arsenic was observed in HW06 at 6 ug/L in an unfiltered sample. Oddly, the filtered sample from this location contained a slightly higher level of arsenic, 7.8 ug/L. While these concentrations marginally exceed the risk-based screening level for arsenic in tap water (4.5 ug/L), they are less than the enforceable drinking standard for public water supplies (10 ug/L).

Note that samples collected from this well on 26 January 2012 revealed arsenic at 7.6 ug/L (unfiltered) and 6.3 ug/L (filtered).

Chromium

In HW06, chromium was detected in unfiltered and filtered wellhead samples at respective concentrations of 7 and 13.6 ug/L. (Again, the finding of a higher filtered concentration, compared to unfiltered, is unusual.) The risk-based screening level for the most toxic form of chromium (hexavalent) is 3.1 ug/L. The concentrations observed in HW06 exceed this value by two- to four-fold, yielding an approximate excess cancer risk of up to 4E-04. Note, however, that the form of chromium detected in this sample is not known. If the reported concentrations represent the much less toxic trivalent form of chromium (with a risk-based screening level of 16,000 ug/L), then there is no risk associated with exposure.

An unfiltered sample collected from this location on 26 January 2012 contained chromium at 10.8 ug/L. The filtered sample was non-detect.

Lithium

Lithium was reported in an unfiltered sample at 356 ug/L; the filtered sample for HW06 had lithium at 330 ug/L. With a risk-based screening level of 31 ug/L, there is a potential non-cancer threat associated with chronic exposure (Hazard Quotient = 11). Under acute exposure conditions, ATSDR has suggested a screening concentration of 1500 ug/L for lithium in drinking water.

Samples collected from this well on 26 January 2012 contained lithium at 236 ug/L (unfiltered) and 228 ug/L (filtered).

Sodium

Samples collected from HW06 contained sodium at concentrations of 110,000 ug/L (unfiltered) and 107,000 ug/L (filtered). A quantitative assessment of risk cannot be performed for sodium; however, U.S. EPA has a non-enforceable Health Advisory of 20,000 ug/L for sodium in drinking water. This value is based on recommendations for individuals on sodium-restricted diets.

The 26 January 2012 sampling event reported sodium concentrations of 83,700 ug/L (unfiltered) and 83,300 ug/L (filtered) in this well.

No other constituents were detected at levels of concern in HW06.